

SOLAR PHYSICS PARAMETERS²⁴

Parameter	Symbol	Value	Units
Total mass	M_{\odot}	1.99×10^{33}	g
Radius	R_{\odot}	6.96×10^{10}	cm
Surface gravity	g_{\odot}	2.74×10^4	cms ⁻²
Escape speed	v_{∞}	6.18×10^7	cms ⁻¹
Upward mass flux in spicules	—	1.6×10^{-9}	g cm ⁻² s ⁻¹
Vertically integrated atmospheric density	—	4.28	g cm ⁻²
Sunspot magnetic field strength	B_{\max}	2500–3500	G
Surface effective temperature	T_0	5770	K
Radiant power	\mathcal{L}_{\odot}	3.83×10^{33}	erg s ⁻¹
Radiant flux density	\mathcal{F}	6.28×10^{10}	erg cm ⁻² s ⁻¹
Optical depth at 500 nm, measured from photosphere	τ_5	0.99	—
Astronomical unit (radius of earth's orbit)	AU	1.50×10^{13}	cm
Solar constant (intensity at 1 AU)	f	1.36×10^6	erg cm ⁻² s ⁻¹

Chromosphere and Corona²⁵

Parameter (Units)	Quiet Sun	Coronal Hole	Active Region
Chromospheric radiation losses (erg cm ⁻² s ⁻¹)			
Low chromosphere	2×10^6	2×10^6	$\gtrsim 10^7$
Middle chromosphere	2×10^6	2×10^6	10^7
Upper chromosphere	3×10^5	3×10^5	2×10^6
Total	4×10^6	4×10^6	$\gtrsim 2 \times 10^7$
Transition layer pressure (dyne cm ⁻²)	0.2	0.07	2
Coronal temperature (K) at $1.1 R_{\odot}$	$1.1\text{--}1.6 \times 10^6$	10^6	2.5×10^6
Coronal energy losses (erg cm ⁻² s ⁻¹)			
Conduction	2×10^5	6×10^4	$10^5\text{--}10^7$
Radiation	10^5	10^4	5×10^6
Solar Wind	$\lesssim 5 \times 10^4$	7×10^5	$< 10^5$
Total	3×10^5	8×10^5	10^7
Solar wind mass loss (g cm ⁻² s ⁻¹)	$\lesssim 2 \times 10^{-11}$	2×10^{-10}	$< 4 \times 10^{-11}$